BASOVICH, M.

Simplify the system of payments for livestock. Den.i kred.
17  no.9:49-51  S  '59.                          (MIRA 12:12)
    (Stock and stockbreeding)  (Payment)

BASOVICH, M.

Economic accountability in the meat industry. Mias. ind. SSSR 30
no.5:37-39 '59.                                        (MIRA 13:1)

1.Moskovskiy myasokombinat.
                    (Meat industry)

BASOVICH, Moisey Izrail'yevich; NARBUT, K.P., retsenzent; SHVUIM, D.M.,
retsenzent; NOZDRINA, V.A., red.; SOKOLOVA, I.A., tekhn.red.

[Organization of financial work in enterprises of the meat
industry] Organizatsiia finansovoi raboty na predpriiatiiakh
miasnoi promyshlennosti. Izd.2., dop. i perer. Moskva, Pishche-
promizdat, 1960. 141 p.                         (MIRA 14:4)
                (Meat industry--Finance)

BASOVICH, M.

For the further consolidation of the finance of a combine. Fin.
SSSR 21 no.8:61-63 Ag '60.                                    (MIRA 13:8)

1. Pomoshchnik direktora Moskovskogo myasokombinata.
        (Moscow--Meat industry--Finance)

BASOVICH, M.

Our possibilities for increasing profit.  Fin. SSSR 22 no.7:53-56
Jl '61.
(MIRA 14:7)

1. Nachal'nik finansovogo otdela Moskovskogo nyasokombinata
im. A.I. Mikoyana.
(Moscow—Meat industry—Finance)

BASOVICH, M.

Our conclusions and suggestions. Den. i kred. 21 no.6:28 Je
'63.
(MIRA 16:8)

1. Nachal'nik finansovogo otdela Moskovskogo myasokombinata.
(Moscow—Meat industry—Finance) (Payment)

BASOVICH, M.

Payments for beef cattle. Mias.ind.SSSR 35 no.1:53-54 '64.

(MIRA 17:4)

1. Moskovskiy ordena Lenina myasokombinat.

BASOVICH, S.N.

Scales with a lateral graduation.  Izm.tekh.  no.9:28-29  S
'60.                                              (MIRA 13:9)
          (Rulers (Instruments))

BASOVSKAYA, G., kand.ekonomicheskikh nauk

"Retail trade in the United States" by G. Zotov. Reviewed by G.
Basovskaia. Sov. torg. 35 no.6:48-50 Je '62.              (MIRA 15:7)
                (United States—Retail trade)
                      (Zotov, G.)

BASOVSKIY, A. (Poltava)

Training chiefs of collective farm fire brigades. Pezh.delo 4 no.9:
16 S '58.                                                    (MIRA 11:9)

1.Zamestitel' nachal'nika Otdela pozharnoy okhrany.
              (Collective farms--Fires and fire prevention)

L 05876-67   EWT(1)   GD

ACC NR: AT6020429   (N)                 SOURCE CODE: UR/0000/65/000/000/0143/0154

AUTHOR: Drabovich, Yu. I.; Basovskiy, V. F.; Gubarevich, V. N.; Pazeyev, G. F.

ORG: Institute of Electrodynamics AN UkrSSR (Institut elektrodinamiki AN UkrSSR)

TITLE: A DC-to-AC converter with continuous control of the effective output voltage

SOURCE: AN UkrSSR. Preobrazovaniye i stabilizatsiya elektromagnitnykh protsessov (Conversion and stabilization of electromagnetic processes). Kiev, Naukova dumka, 1965, 143-154

TOPIC TAGS: inverter, phase shifter, electronic oscillator, voltage regulator

ABSTRACT: The authors consider a semiconductor unit for converting direct current to alternating current at a power rating of 2 kva with frequency stabilization and continuous control of the effective output voltage. The basic principles for calculating the parameters of the device are given. The unit consists of a master oscillator, two power amplifiers, a phase
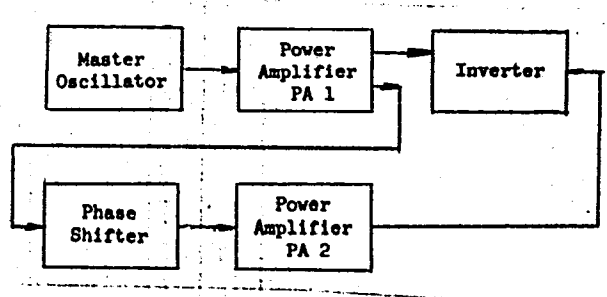


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L. 05876-67

ACC NR:    AT6020429                                              O

shifter and an inverter (see figure). The control signal from the master oscillator is fed to power amplifier PA 1 from which it is sent to the phase shifter and the base circuits of the transistors in two arms of the inverter. The signal at the output of the phase shifter is fed to power amplifier PA 2 from which it goes to the base circuits of the transistors in the two other arms of the inverter. The load is connected in the inverter diagonal. Each unit in the system is considered separately. The formulas derived for determining the parameters of the proposed converter are verified by data for an experimental 2 kva converter. Orig. art. has: 6 figures, 21 formulas.

SUB CODE:  09/  SUBM DATE:  26Oct65/  ORIG REF:  010

          kh

Card  2/2

L 05875-67   EWT(1)   GD

ACC NR:   AT6020428        (N)        SOURCE CODE:   UR/0000/65/000/000/0136/0142

AUTHOR:   Basovskiy, V. F.

ORG:   Institute of Electrodynamics AN UkrSSR (Institut elektrodinamiki AN UkrSSR)

TITLE:   Magnetic-semiconductor phase shifter

SOURCE:   AN UkrSSR. Preobrazovaniye i stabilizatsiya elektromagnitnykh protsessov (Conversion and stabilization of electromagnetic processes). Kiev, Naukova dumka, 1965, 136-142

TOPIC TAGS:   magnetic amplifier, phase shifter, signal shape

ABSTRACT:   The author considers the problem of generating a square-wave voltage shifted in phase with respect to a reference voltage of the same shape. The solution of square-wave phase inversion problems requires circuits with parameters which are independent of frequency. The block diagram for a unit of this type is shown in the figure. The source of the square-wave reference voltage is master oscillator MO which feeds magnetic amplifier MA. The reference

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L 05875-67

ACC NR: AT6020428

voltage is shifted in phase through an angle close to 180° by the magnetic amplifier and semiconductor control oscillator CO. The operation of each element in this device is considered separately. It is shown that the frequency of the master oscillator is proportional to the supply voltage and that this frequency may be stabilized either by using a regulated power supply or by stabilization of the voltage applied to the collector winding. The working and control half-cycles of a magnetic amplifier operating on square-wave voltage are always equal. The duration of the control signal has no effect on control quality. The control current should be 1.5-2 times greater than the feedback current for the most reliable operation. Experimental models of the proposed phase shifter were tested and their characteristics are given. Orig. art. has: 4 figures, 3 formulas.

SUB CODE: 09/ SUBM DATE: 26Oct65/ ORIG REF: 006

kh

Card 2/2

BASOVSKY, Oliver

Contribution to the functional classification of towns and transient type of communities in Slovakia based on 1950 situation. Geogr cas SAV 15 no.1:6-29 '63.

Bass, A.

CA

IIC

The metabolism of butyric acid in a soil microörganism.
A. Kleinzeller and A. Alexandra. Collections Czech. Chem.
Communs. 13, 409-40 (1948) (in English); cf. C.A. 42,
4366.—A bacterium isolated from garden soil, provision-
ally identified as B. vegatus, N. Armus, or N. agrestis,
rapidly oxidizes butyrate. ($Q_{O_2}$ values in 0.013 M butyrate
were 70-140; in the absence of butyrate, 18-30.) Under
anaerobic conditions, no metabolism of butyrate was
detected; there was no evidence of a butyric acid dehydro-
genase. Enzyme inhibitors give no clue to the mechanism
of the oxidation. Rates of oxidation were compared with
those of Na salts of possible intermediates of β-oxidation
and of γ-oxidation. The data exclude both of these types
of oxidation. The only substrates oxidized at a rate
comparable to that of butyric acid are α-ketobutyric,
propionic, pyruvic, and acetic acids. These results
suggest α-oxidation according to $CH_3CH_2CH_2COOH \rightarrow$
$CH_3CH_2COCOOH \rightarrow CH_3CH_2COOH \rightarrow$
$CH_3COOH$.              H. L. Whidden

C.A.  BASS, A.

**Biosynthesis of fats from saccharides in yeasts. I.**
Composition of fats in various phases of formation. Arnošt
Kleinzeller and Arnošt Bass (Tech. Univ., Prague, Czech.).
*Chem. Listy* 45, 303-9(1951).—Formation of fat from glu-
cose in *Rhodotorula* was studied. After 19, 38, and 63 hrs
of cultivation, 4.4%, 25.2%, and 38.8% of fat (dry
basis) were found, resp. The lipide fractions were saponi.,
and the acids detd. by fractional crystn., distn., 1 no.,
spectroscopically, and by distn. of Me esters. Conclusions
are drawn as to the effect of time of cultivation on the
compn. of fatty acids in yeast fats.          M. Hudlický

CA

BASS, A.

*Microbiology #11*

Biosynthesis of fats by yeasts. II. Composition of fat at various temperatures. Arnold Bass and Jaroslav Hospodka (Tech. Univ., Prague, Czech.). Chem. Listy 46, 343-5(1952); cf. C.A. 46, 11315g.—The fat produced by *Rhodotorula gracilis* is more satd. and of lower mol. wt. when formed at higher temps. Thus different proportions of palmitic, oleic, linoleic, linolenic and C₂₀-₂₂ acids are formed at different temps.                M. Hurlickf

BASS A.

Resynthesis of glycogen in muscle after ___
A. Bass F ___ ___ and ___
___ ___ Bokernuze ___
___ ___ ___

___ ___ ___ ___
___ ___ ___ ___
___ resem ___ the curve of a muscle ___
The threshold frequency of direct ___ ___
glycogen synthesis varies in different muscles, and depends
on the nature of the functions of the muscle. The functional
state of the cerebral cortex influenced the rate of resynthesis.
After administration of NaBr the course of resynthesis.
resumbled that in a denervated muscle. The findings are
discussed according to the working hypothesis which defines
the trophic influence of the nervous system as the nervous
control of metabolic recovery processes. Felix Saunders

BASS, A.

Effect of denervation and nociceptive stimulation on the
structure of glycogen in skeletal muscle   A. Bass and [...]
Vodicka / Acad  Sci  Prague [...]

[...] showed that denervation [...]
tissues retards both [...]
nociceptive [...]

BASS, A.; GUTMANN, E.; VODICKA, Z.

Resynthesis of muscle glycogen following work.  Cesk. fysiol.
4 no.4:419-426 22 Oct 55.

1. Fysiologicky ustav CSAV, Praha.
     (GLYCOGEN, metabolism,
         musc., resynthesis after work)
     (MUSCLES, physiology,
         glycogen, resynthesis after work)
     (WORK, physiology,
         musc. glycogen resynthesis after work)

BASS, A.; VODICKA, Z.

Effect of denervation and of nociceptive irritation on glycogen
structure in skeletal muscles.  Cesk. fysiol. 4 no.4;427-432
22 Oct 55.

1. Fysiologicky ustav CSAV, Praha.
   (MUSCLES, metabolism,
       glycogen, eff. of denervation & of nociceptive irritation)
   (GLYCOGEN, metabolism,
       musc., eff. of denervation & of nociceptive irritation)

GUTMANN, E.; BASS, A.; VODICKA, Z.; VRBOVA, G.

Nervous control of trophic processes in striated muscle.
Physiol. bohem. 5:14-16 Suppl. 1956.

1. Institute of Physiology, Czechoslovak Academy of Sciences,
Prague.
  · (MUSCLES, metab.
        glycogen, control by nerves in striated musc.)
    (GLYCOGEN, metab.
        musc., control by nerves in striated musc.)

— BASS A.

3966. BASS A. and VODIČKA Z. Fysiol.Úst.ČSAV, Praha. * Změny aktivity hexo-kinásy po pracovním zatížení svalu a jejich závislost na inervaci. Changes in hexokinase activity in muscle after exercise and their dependence on innervation ČSL.FYSIOL. 1956, 5/1 (45-49) Tables 4 One and 4 hr. after exercise (direct stimulation of the triceps surae with galvanic current) hexokinase activity in extract from this muscle is decreased. After de-nervation this decrease is less apparant and 3 days after neurotomy it has com-pletely disappeared. Hexokinase activity 4 hr. or 3 days after nerve section with-out previous exercise is not changed in comparison to normal innervated muscle.

Hahn - Prague

*Fysiologický ústav ČSAV, Praha.*

HUDLICKA, O.; VODICKA, Z.; BASS, A.

Penetration of radioactive sodium and phosphorus into the soleus
and quadriceps muscles following nociceptive stimulation.  Cesk.
fysiol. 5 no.1:50-55 26 Mar 56.

1. Fysiologicky ustav CSAV, Praha.
        (SODIUM, radioactive,
            musc. metab., eff. of pain stimulation (Cz))
        (PHOSPHORUS, radioactive,
            same)
        (MUSCLES, metabolism,
            radiophosphorus & radiosodium, eff. of pain stimulation
            (Cz))
        (PAIN, experimental,
            eff. on musc. radiophosphorus & radiosodium (Cz))

BASS, A.

Changes in the activity of hexokinase after work loading
of muscles and their dependence on innervation   A. Bass
and Z. Vodicka (Acad. Sci., Prague      Physiol. Bohem.
5, 58 62(1956).—In rats in which muscle work loading is
produced by elec. stimulus, hexokinase activity declines 1–4
hrs. after such loading; denervation does not appreciably
affect the result after 1 hr. but 3 days after the operation the
decline of enzyme activity no longer takes place after work
loading.   Hence, the enzymic activity in the muscle does de-
pend on the nervous system.       G. M. Kosolapoff

BASS, A.

6414. Uptake of radioactive isotopes sodium-24 and potassium-32 into skeletal muscle on nociceptive stimulation. O. Hudlicka, L. Vodicka, and A. Bass *Physiol.* ____ ____, ____ 3 ____ ____ of Physiol., Czech. Acad. of Sci., Prague, Czechoslovakia). After crushing the metatarsophalangeal joints of one of the hind limbs in rats, the uptake of $^{24}$Na and $^{32}$P by the adjacent antigravity muscles was markedly decreased ½ and 4 hrs. later. This did not occur if the motor nerve to the muscles was severed, but was uninfluenced by sympathectomy. The decrease was not caused by a decrease in the blood supply to the muscles.    A. Ackroyd

VODICKA, Z.; GUTMANN, E.; BASS, A.

Glycogen metabolism in the skeletal muscle in rats following nociceptive
irritation. Cesk. fysiol. 6 no.3:354-361 Aug 57.

1. Fysiologicky ustav Cs. akademie Ved., Praha.
        (MUSCLES, metabolism,
                glycogen, eff. of nociceptive irritation in rats (Cz))
        (GLYCOGEN, metabolism,
                musc., eff. of nociceptive irritation in rats (Cz))

COUNTRY     : Czechoslovakia

CATEGORY    : Human and Animal Physiology, Neuromuscular Physiol

ABS. JOUR.  : RZhBiol., No. 5 1959, No. 22376

AUTHOR      : Vadicka, A.; Gutmann, E.; Bass, A.

INST.       : --

TITLE       : Gycogen Metabolism in the Skeletal Muscle of
              Rats Subjected to Nociceptive Stimulation.

ORIG. PUB.  : Ceskosl. fysiol,m 1957, 6, No. 5, 354--361

ABSTRACT    :   Reflex atrophy of the skeletal muscles of
the involved extremity was observed in rats
subjected to nociceptive stimulation (injection
of 0.05 ml of turpentine or smashing the tissues
of the foot of a hind limb).  The glycogen level
in the muscle gradually fell after an initial
slight rise; in the first 3 days this fall was
greater than after transection of the motor
nerves.  When this was done there was a retarda-
tion of both the utilization and synthesis of
glycogen; in the presence of nociceptive stimula-
tion, however, this retardation was greater than af-

Card:       1/2

*BASS A*

BABICKY, A.; BASS, A.; CHALOUPKA, J.; ZAK, R.

Contamination of radiation from radioactivepotassium and phosphorus.
Cesk. fysiol. 7 no.2:112-116 Mar 58.

1. Biologicky ustav CSAV, Fysiologicky ustav CSAV, Praha
    (PHOSPHORUS, radioactive
        contamination (Cs))
    (POTASSIUM, radioactive,
        same)

BASS, A.

Incorporation of labeled phosphate into certain low-molecular compounds
in normal and denervated muscles. Cesk. fysiol. 7 no.3:220-221 May 58.

1. Fysiologicky ustav CSAV, Praha.
        (PHOSPHATES, metab.
                musc., incorporation into low-molecular cpds. in normal
                & denervated musc. (Cz))
        (MUSCLES, metab.
                phosphates, incorporation into low-molecular cpds. in
                normal & denervated musc. (Cz))

BASS, A.; GUTMANN, E.; HUDLICKA, O.; VRBOVA, G.

Effect of repeated irritation of the muscle on the course of glycogen re-
synthesis. Cesk. fysiol. 7 no.5:428-429 Sept 58.

1. Fysiologicky ustav CSAV, Praha.
    (GLYCOGEN, metab.
        musc. eff. of repeated irritation on resynthesis (Cz))
    (MUSCLES, metab.
        glycogen, eff. of repeated irritation on resynthesis (Cz))

EXCERPTA MEDICA Sec 2 Vol 12/11 Physiology  Nov  59

5393. THE EFFECT OF REPEATED MUSCLE STIMULATION ON THE COURSE
OF GLYCOGEN RESYNTHESIS AND LACTIC ACID FORMATION -
Bass A., Gutmann E., Hudlička O. and Vrbová G. Inst. of
Physiol., Czechoslovak. Acad. of Sci/, Prague - PHYSIOL. BOHEM. 1959,
8/2 (93-101) Graphs 3 Tables 3

In normal muscles an overshoot reaction occurs (i.e. the level of glycogen becomes
higher than before stimulation). The course of this 'supercompensation reaction'
depends on the interval between the 1st and 2nd bouts of muscle stimulation. With a
45-min. interval, resynthesis was retarded and the supercompensation reaction
occurred much later than after a single stimulation. The amount of glycogen broken
down is thus much smaller than with a single work load. With a 90-min. interval,
glycogen breakdown amounts to 60% (more than with a 45-min. interval and less
than after a single work load) and a supercompensation reaction of approximately
the same size occurs as after a single bout of stimulation. With a 240-min. interval
the glycogen breakdown and supercompensation reaction are approximately the
same as for the 90-min. interval. A 2nd muscular contraction never leads to an
increase in the supercompensation reaction in normal muscle. In denervated muscle,
repeated stimulation leads to an overshoot reaction. This reaction is never
evoked by a single bout of muscle stimulation. Lactic acid formation in normal
muscle is approximately the same during the 1st and 2nd stimulation. In denervated
muscle, less was formed during the 2nd stimulation. With normal muscle, a
simultaneous decrease occurs in the lactic acid content of the contralateral muscle.
No such reduction was observed with denervated muscle.          Hahn - Prague

HUDLICKA, O.; BASS, A.

Utilization of various substances in normal and denervated muscles.
Cesk. fysiol. 8 no.3:202 Apr 59.

1. Fysiologicky ustav CSAV, Praha. Predneseno na III. fysiologickych
dnech v Brne dne 14. 1. 1959.
        (MUSCLES, metabolism,
            in normal & denervated musc. (Cz))

BASS, A.;HUDLICKI, O.

Changes in energy metabolism in a denervated muscle. Cesk. fysiol.
9 no.1:1 Ja 60.

1. Fysiologicky ustav CSAV, Praha.
        (MUSCLE physiol.)

BASS, A.A; HUDLICKA, O.

Correlation between blood circulation and the requiremen t of various substances in the muscle. Cesk.fysiol. 9 no.3:217-218 My '60.

1. Fysiologicky ustav CSAV, Praha
        (MUSCLES metab.)
        (BLOOD CIRCULATION)

HUDLICKA, O.; BASS, A.

Changes in the requiremen t of various substances by the muscles
during direct excitation. Cesk.fysiol. 9  no.3:236-237 My '60.

1. Fysiologicky ustav CSAV, Praha.
        (MUSCLES physiol)

HUDLICKA, O.; BASS, A.; ZBUZEK, V.; BARTOSOVA, D.

The utilization of metabolites in the muscle during rhythmic contractions and in the restitution phase. Physiol. Bohemoslov. 11 no.5:404-412 '62.

1. Institute of Physiology, Czechoslovak Academy of Sciences, Research Institute of Physical Culture, ITVS faculty of the Charles University, Prague.

(ENERGY METABOLISM)      (MUSCLES)

BASS, A.; HUDLICKA, O.; ZBUZEK, V.; BARTOSOVA, D.

The utilization of metabolites in the denervated muscle during stimulation and the restitution phase.  Physiol. Bohemoslov. 11 no.5:413-422 '62.

1. Institute of Physiology, Czechoslovak Academy of Sciences, Research Institute of Physical Culture, ITVS, faculty of the Charles University, Prague.

(ENERGY METABOLISM)        (MUSCLES)

BASS, A.; VITEK, V.

The metabolism of high energy phosphate compounds in denervated muscle. Physiol. Bohemoslov. 12 no.5:469-474 '63.

1. Institute of Physiology, Czechoslovak Academy of Sciences, Prague.

(MUSCLES)  (SCIATIC NERVE)  (COENZYMES)
(ADENOSINE TRIPHOSPHATE)  (ADENINE NUCLEOTIDES)

BASS,A.;HUDLICKA, O.

Interrelations between metabolism and blood flow in normal and denervated dog gastrocnemius muscle at test and during stimulation. Physiol. Bohemoslov. 13 no.1: 48-61 '64.

1. Institute of Physiology, Czechoslovak Academy of Sciences, Prague.

BASS, A.

Rotary kilns for burning bricks.  p. 172.
STAVIVO, Praha, Vol. 33, no. 5, May 1955.

SO:  Monthly List of East European Accessions, (EEAL), LC, Vol. 4, no. 10, Oct. 1955,
     Uncl.

M BASS, A.I.

*18*

*The Production of Nichrome.* S. A. Pugulin, A. I. Bass, G. A. Kagan, K. M. Lekarenko, and V. I. Miheeva (*Metallurg (Metallurgiat)*, 1932, (2), 15 26; (3), 19-33).—[In Russian.] Information is given on suitable compositions of the alloy, the purity of the raw materials, and the melting, casting, hot-forging, and cold-rolling of the alloy. From the results of works' tests a procedure is worked out for the production of Nichrome ribbon.—N. A.

NEDOVIZIY, I.N.; BASS, A.I., redaktor; STARODUBTSEVA, S.N., redaktor; MIKHAYLOVA, V.V., tekhnicheskiy redaktor

[Rapid drawing of low-carbon steel wire] Skorostnoe volochenie niskouglerodistoi stal'noi provoloki. Moskva, Gos. nauchno-tekhn. isd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1954. 188 p.
(Wire)                                                    (MLRA 7:8)

TARNAVSKIY, Abram L'vovich; BASS, A.I., red.; GOLYATKINA, A.G., red.izd-va;
KLEYNMAN, M.R., tekhn.red.

[Efficiency of back-pull wire drawing] Effektivnost' volocheniia
s protivonatiazheniem. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry
po chernoi i tsvetnoi metallurgii, 1959.  151 p.      (MIRA 12:4)
                    (Wire drawing)

SBITNEV, Andrey Stepanovich; BELEN'KIY, Yakov Grigor'yevich; BASS, A.I., red.; GORDON, L.M., red.izd-va; MIKHAYLOVA, V.V., tekhn.red.

[Wire screens and belts] Provolochnye setki i lenty. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallur-gii, 1960. 171 p.

(Wire netting)                                          (MIRA 13:1)

SBITNEV, Andrey Stepanovich; BELEN'KIY, Yakov Grigor'yevich; BASS, Aleksandr Izrailevich; OZERETSKAYA, A.L., red.izd-va; ISLENT'YEVA, P.G., tekhn. red.

[Wire mesh and belts] Provolochnye setki i lenty. Izd.2., ispr. i dop.  Moskva, Metallurgizdat, 1963.  227 p.
                                          (MIRA 16:6)
            (Wire netting)

ESTRIN, B.M.; BASS, A.I.

Bright annealing of wire in continuous shaft furnaces. Metalloved.
i term. obr. met. no.4:40-42 Ap '64.                    (MIRA 17:6)

1. TSentroenergometallurgprom, zavod im. Lepse.

BASS, B.A. (Khabarovsk)

Remodeling the ER-7A rotor excavator for the excavation of frozen ground. Stroi. truboprov. 9 no.8:33-34 Ag '64.
(MIRA 17:12)

1. BASS, B. N., Eng.

2. USSR  (600)

4. Milking Machines

7. DUP - 10 movable milking apparatus, No. 4, 1953.

9. Monthly List of Russian Accessions, Library of Congress, ___April___ 1953, Uncl.

BASS, E.

Some practical aspects of the theory of filtration; intermittent filters.

p. 170 (Magyar Kemikusok Lapja. Vol. 12, no. 5/6, May/June 1957, Budapest, Hungary)

Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 2, February 1958

BASS, E. prof. (Budapest XI., Stoczek u. 2.)

Currents in centrifugal fields. Periodica polytechn eng 3 no.4:
321-340 '59.
(EEAI 9:7)

1. Leiter des Lehrstuhls fur Chemisches Maschinenwesen und
Landwirtschaftliche Industrie der Technischen Universitat,
Budapest.
(Centrifugal force)

BASS, E.

Czech watchmaker. p. 22

JEMNA MECHANIKA A OPTIKA. (Ministerstvo presneho strokirenstvi a Ustav pro vyzkum optiky a jemne mechaniky) Praha, Czechoslovakia, Vol. 4, No. 1, Jan. 1959

Monthly List of East European Accessions (EEAI), LV, Vol. 8, No. 7, July 1959
Uncl.

BASS, E.

Streams in the centrifugal field. I. (To be contd.) p. 171.

MAGYAR KEMIKUSOK LAPJA. (Magyar Kemikusok Egyesulete) Budapest, Hungary
Vol. 14, no. 4, Apr. 1959.

Monthly list of East European Accessions (EEAI), LC, Vol. 8, No. 8,
August 1959.
Uncla.

BASS, E., prof. (Budapest XI. Sztoczek u.2.)

Currents in centrifugal fields. II. Settling the safety of tube
centrifuges. Periodica polytechn eng 4 no.1:41-61 '60.  (EEAI 10:1)

1. Lehrstuhl fur chem. Maschinenwesen und landwirtschaftliche
Industrien der Technischen Universitat, Budapest.
        (Centrifuges)

BASS, Emil, egyetemi tanar

Latest results in settling and filtering. Elelm ipar 14 no.8/9: 243-250 Ag-S '60.

1. Budapesti Muszaki Egyetem, Vegyipari Gepek es Mezogazdasagi Iparok Tansseke, Budapest.

BASS, Emil

Streams in the centrifugal field.III. Magy kem lap 15 no.1:40-46
Ja '60.

1. Muszaki Egyetem Vegyipari Gepek e s Mezogazdasagi Iparok
Tanszeke, Budapest.

BASS, Emil, egyetemi tanar

Characterisation of the function of centrifugal sedimentators in theory and practice.II. A detailed investigation of the function of the pipe centriguge. Gep 13 no.4:126-132 Ap '61.

1. Budapesti Muszaki Egyetem Vegyipari Gepek es Mezogazdasagi Iparok Tanszeke.

BASS, E. A.

AID P - 1513

Subject     :  USSR/Electricity

Card 1/1    Pub. 26 - 9/36

Author      :  Bass, E. A., Eng.

Title       :  Testing distance relay protection of the PZ-151 type

Periodical  :  Elek. sta.,  3, 29-31,  Mr 1955

Abstract    :  The author investigates the functioning of the PZ-151
               relay arrangement, designed for low ground currents.
               The protective device consist of current relays and two
               power-directional relays, which help to select the
               damaged phase.  2 connection diagrams

Institution:  None

Submitted   :  No date

BASS, I.A., inzhener; GIL'CHER, O.A., inzhener; SAVOST'YANOV, A.I., inzhener.

Using PZ-156A distance protection. Elek.sta. 27 no.7:41-46
Jl '56.                                                    (MLRA 9:10)

(Electric apparatus and appliances)

BASS, E.I., inzhener; GOLUBEV, M.L., inzhener; NIKITSKIY, V.Z., inzhener.

Parallel operation of protective relay devices during disturbances in voltage circuits. Elek.sta. 27 no.8:55-56
Ag '56.
(MLRA 9:10)

(Electric circuits) (Electric relays)

BASS, Eleonora Isaakovna; BERKOVICH, Mikhail Arnol'dovich;
SAVOST'YANOV, Aleksey Ivanovich; SEMENOV, Vladimir
Aleksandrovich; MEL'NIKOV, M.F., nauchn. red.; SOROKINA,
M.I., red.; PERSON, M.N., tekhn. red.

[Maintenance electrician of relay protection and automatic
control systems] Elektromonter po ekspluatatsii releinoi
zashchity i avtomatiki. [By] E.I.Bass i dr. Moskva, Prof-
tekhizdat, 1963.  342 p.                    (MIRA 17:3)

ACCESSION NR: AP4019327                    S/0105/64/000/003/0082/0086

AUTHOR: Bass, E. I. (Engineer); Budkin, V. V. (Engineer)

TITLE: General relations in Hall-generator relays responsive to two electric quantities

SOURCE: Elektrichestvo, no. 3, 1964, 82-86

TOPIC TAGS: Hall effect, Hall generator, Hall generator relay, phase comparison relay, two Hall generator relay, differential Hall generator relay

ABSTRACT: Relays used for automation and protection of power-circuit elements consist of (a) a Hall generator, (b) a switching (contact or contactless) unit, and (c) a transducer-amplifier. General relations are considered for Hall relays responding to two electrical quantities on the basis of phase comparison; the Hall generators are differentially connected. Formulas for voltage and power transfer constants are developed, as well as relations determining the

Card 1/2

ACCESSION NR: AP4019327

output power available for the switching unit. Also, connections between the parameters at the Hall-wafer inputs and those at the switching-unit input are established. The formulas are intended for calculating power-directional relays, impedance relays, and "other complex relays." Orig. art. has: 2 figures and 25 formulas.

ASSOCIATION: Moskovskiy energeticheskiy institut (Moscow Power-Engineering Institute)

SUBMITTED: 16Aug63          DATE ACQ: 27Mar64          ENCL: 00

SUB CODE: GE               NO REF SOV: 006            OTHER: 000

Card 2/2

BASS, E.I., inzh.; BUDKIN, V.V., inzh.

General relationships for a relay based on Hall transducers responsive to two electrical quantities. Elektrichestvo no.3: 82-86 Mr '64.
(MIRA 17:4)

1. Moskovskiy energeticheskiy institut.

BASS, F., MUDr.; OTRUBA, J., MUDr.

Experience with Richardson's pregnancy test.  Cesk. gyn. 19 no.
5:344 Oct 54.

1. Z gyn. oddeleni UNZ ONV 16 (MUDr. Bass, Fr.) a gyn. odd.
nemocnice Praha 4 (doc. Dr. V. Sebek).
            (PREGNANCY TESTS
                Richardson's test, evaluation)

BASS, Fr.

Cervical mucus in the differential diagnosis of pregnancy and amenorrhea of a different origin. Cesk. gynek. 27 no.9:633-635 N '62.

1. Gyn. odd. poliklin. OUNZ v Praze 5.
     (PREGNANCY)        (AMENORRHEA)   ; (CERVIX MUCUS)

BASS, Frantisek, MUDr.; HEROLD, Jan, MUDr.

Method of detection of neoplasms of female genitalia in rural areas.
Cesk. gyn. 22[37] no.1/2:11-14 Jan 58.

1. I. por.-gyn. klinika v Praze, prednosta Dr. F. Bass. J. H., Praha 16,
U Nesypky 19.
        (GENITALIA, FEMALE, neoplasms
            diag. methods in rural districts (Cz))
    (RURAL CONDITIONS
            diag. of neoplasms of female genitalia in rural dis-
            tricts (Cz))

U S S R .

Method of determining the Parameters of a
Semiconductor. F. G. Bass & I. M. Tsidilkovskii
(Zh. tekh. Fiz. O. 1951 Vol. 21 No. 10, pp. 1834-
1836) A method is discussed for determining the
carrier mobility u and the parameter r defined by the
equation l = r(ul) c², where r is the mean free path of
the carrier and is a function of temperature T, and u is
the carrier velocity. Formulae are given for the Hall
effect, the longitudinal and transverse Nernst-Etting-
hausen effects and two new longitudinal-transverse
galvanomagnetic and thermomagnetic effects, in terms
of functions of u and of (u H/c), where H is the applied
magnetic field and c is the velocity of light. The new
effects occur when the direction of a magnetic field
applied in the XZ plane makes an angle θ with the Z axis, the
current flowing along the X axis, the electric force
produced is in the direction of the Z axis and is inde-
pendent of the sign of H. An experimental check,
which is not described, gave values of u and r obtained
from measurements of the Hall effect and of the new
effects in agreement with previously published results.

BASS F. G.

USSR/Physics - Semiconductors

FD-1033

Card 1/1          Pub 146-18/25

Author      :  Tsidil'kovskiy, I. M., and Bass, F. G.

Title       :  G. M. Avak'yants' work "Theory of the equations of transfer in strong electric fields"

Periodical  :  Zhur. eksp. i teor. fiz. 28, No.2, 245, February 1955

Abstract    :  The necessity for a theoretical investigation of the properties of super-
               conductors in strong electric fields prompted G. M. Avak'yants (ibid. 26,
               562, 668, 1954) to study transfer phenomena in semiconductors in which
               the electron gas is strongly heated. The authors remark that Avak'yants'
               work does not interpret experimental results (e.g. Poole's effect) and does
               not present anything new in the problem of the behavior of semiconductors
               in strong electrical fields; and that Avak'yants in his calculation of $f_0$
               neglected the term taking account of the transition of electrons in the
               conductivity zone (or into local levels). Three references; e.g. B. ?.
               Davydov, ibid. 6, 471, 1936 (here Davydov obtained the dependence of elec-
               tric conductivity upon electric field strength in a form true for only few
               superconductors).

Institution:  Dagestan Affiliate, Academy of Sciences USSR, Makhachkala

Submitted  :  July 12, 1954

*BASS, F.G.*
USSR/ ... - Semiconductors

Card 1/1      Pub. 146-7/25                                    FD-1847

Author      :  Bass, F. G., and Tsidil'kovskiy, I. M.

Title       :  Theory of the effects of Hall and Nernst-Ettingshausen in semiconductors
               with mixed conductivity

Periodical  :  Zhur. eksp. i teor. fiz. 28, 312-320, March 1955

Abstract    :  The authors calculate the Hall and Nernst-Ettingshausen emf, and also the
               distribution of the concentrations of the current carriers in a semicon-
               ductor with mixed conductivity located in an inhomogeneous magnetic field.
               They take into consideration the presence of levels which are due to ad-
               mixtures, and the recombination of current carriers.  The authors thank
               Kh. I. Amirkhanov and V. P. Zhuze.  Five references, 3 USSR:  A. I. Guba-
               nov, ibid., 21, 97, 1951; A. I. Ansel'm, Zhur. tekh. fiziki, 22, 1146,
               1952;  K. B. Tolpygo, Trudy In-ta fiziki AN USSR, 3, 52, 1952.

Institution:  Dagestan Affiliate, Academy of Sciences USSR, Makhachkala

Submitted   :  March 4, 1954

BASS, F.G.; BASHIROV, R.I.; TSIDIL'KOVSKIY, I.M.

Theory of isothermic galvanomagentié and  thermomagnetic phenomens
in semiconductors. Izv.AN Azerb.SSR no.10:3-16 O '56.

(Semiconductors)                                    (MIRA 10:3)

*BASS F. G.*

SUBJECT          USSR / PHYSICS                    CARD  1 / 2              PA - 1892
AUTHOR           BASS,F.G., CIDIL'KOVSKIJ,I.M.
TITLE            The Theory of Isothermal Galvano- and Thermomagnetic Phenomena in
                 Semiconductors.
PERIODICAL       Žurn.eksp.i teor.fis,31,fasc.4,672-683 (1956)
                 Issued:  1 / 1957

The present work investigates the generalization of the theory to the domain of
medium and strong effective magnetic fields for different types of interaction
between current carriers and a crystal lattice. Furthermore, it is explained
what peculiarities of galvano- and thermomagnetic phenomena depend on statis-
tics and on the law of dispersion. Only isothermal effects are dealt with here
because the adiabatic effects differ but little with respect to order of
magnitude from isothermal effects.
Semiconductors with current carriers of one type:  At first the equations of
transition are written down and expressions for the densities of the electric
and the thermal currents are written down. The integrals occurring therein are
expressed in potential series and this decomposition is in general of an asymp-
totic character. The errors of the formulae derived here amount to less than
4%. Galvanometric phenomena: At first two equations for the determination of
$E_y$ and $E_z$ are given. In the general case with any statistics, any dispersion
law, and any dependence of relaxation time on quasimomentum, the (HALL'S) field
$E_y$ changes its sign together with the magnetic field. If the magnetic field has
the same direction as the primary electric field, HALL'S field becomes equal to

Žurn.eksp.i teor.fis,31,faso.4,672-683 (1956)   CARD  2 / 2          PA - 1892

zero.  Thermomagnetic phenomena: The field $E_y'$ which is due to the transversal NERNST-ETTINGSHAUSEN effect, changes its sign together with the magnetic field. The limiting cases of strong and weak effective magnetic fields are investigated. In the case of weak magnetic fields $\varphi$, $E_x'$ depends quadratically on the "effectivity" of the magnetic field and in the case of strong field strengths it tends towards saturation. $E_y'$ increases linearly in weak fields with growing $\varphi$, and decreases in strong fields like $1/\varphi$.

Semiconductors with mixed conductivity: Already some percents of unreal current carriers can exercise considerable influence on the character of thermomagnetic effects. In the case of weak effective field strengths HALL'S field depends linearly on $\varphi_+$, but it can change its sign according to the ratio of concentrations and mobilities of holes and electrons.  The relative change of electric conductivity is proportional to $\varphi_+^2$. The formulae for $E_x'$ and $E_y'$ are derived. Also here the limiting cases of strong and weak effective fields are investigated. At $\varphi_+ \ll 1$ the longitudinal and the transversal NERNST-ETTINGS-HAUSEN field depend on the effective field just as much as in the case of semiconductors with current carriers of one sign.

INSTITUTION:

BASS, F. G., Master Phys-Math Sci — (Diss) "On the theory of galvanomagnetic and thermomagnetic effects in semi-conductors." Khar'kov, 1957, 8 pp, (Min Higher Educ USSR. Khar'kov State Univ Im. A.M. Gor'kogo), 150 copies. (KL, No 40, 1957, 90)

BASS, F.G.; BRAUDE, S.Ya.

On the reflection of radar signals from the sun. Ukr. fiz. zhur. 2 no.2:
149-164 Ap-Je '57.                                    (MIRA 10:6)

1. Institut radiofiziki ta elektroniki Akademii nauk URSR.
          (Radar in astronomy)

126-5-3-5/31

AUTHORS:  Bass, F. G., Kaganov, M. I. and Slezov, V. V.

TITLE:    The Theory of Galvanomagnetic Phenomena in Metals
          (K teorii gal'vanomagnitnykh yavleniy v metallakh)

PERIODICAL: Fizika Metallov i Metallovedeniye, 1957, Vol V, Nr 3,
          pp 406-411 (USSR)

ABSTRACT: Expressions for the Hall constant and resistance of a
          two-band model metal having square-law anisotropic
          dispersion are derived for any magnetic field, even up to
          magnetic fields such that the product of twice the Larmor
          frequency and the mean time between collisions (for electrons)
          is about unity.  The special point of this treatment is that
          the effective masses and mean time between collisions are
          assumed anisotropic.  Eq. (2) is the kinetic equation for
          the distribution function of electrons in one zone with the
          dispersion law as expressed by Eq.(1).  The main part of
          the argument, which is fully evident from Eqs. (11) and (14),
          relates to the one-band case, extension to the two-band case
          being briefly considered in section 4.   It is demonstrated
          that the assumption of anisotropy introduces no essentially
          new feature.  A final note at the end indicates that
          better agreement with experiment is obtainable by consider-
Card 1/2  ing three bands (groups of carriers).  Acknowledgments are

The Theory of Galvanomagnetic Phenomena in Metals    126-5-3-5/31

        made to Ye. S. Borovik and I. M. Lifshits for useful
        discussions.
        There are 5 references, 4 of which are Soviet, 1 English.

ASSOCIATION: Fiziko-Tekhnicheskiy Institut AN Ukr. SSR
        (Physico-Technical Institute, Ac. Sc., Ukr. SSR)

SUBMITTED: October 16, 1956

        1. Metals--Electrical properties   2. Metals--Magnetic properties
        3. Metals--Theory

Card 2/2

AUTHOR        BASS, F.G.                                                    56-4-28/52
TITLE         On a Possible Mechanism of an Increase of Conductivity of the Atomic
              semiconductors in a Strong Electric Field.
              (Ob odnom vozmozhnom meknanizme rosta provodimosti atomarnykh poluprovo-
              dnikov v sil'nom elektricheskom pole -Russian)
PERIODICAL    Zhurnal Eksperim.i Teoret.Fiziki, 1957,Vol 32, Nr 4,pp 863-865(U.S.S.R.)
              Received 7/1957                                    Reviewed 9/1957

ABSTRACT      The present paper investigates the influence exercised by the decelera-
              tion of the recombination of the electrons upon the conductivity of ato-
              mic semiconcuductors. Conductivity of a semiconductor,as is known,increases
              in a strong electric field.Various probably not correct explanation are
              given.The coefficient of the recombination not only depends upon the pro-
              bability of the electron adhering to the admixture center,but also upon
              the diffusion of the electrons towards the admixture center.Both these
              factors can be modified only by electrical fields,which are considerably
              weaker that the fields in the atoms.The distribution of the electrons among
              the energies(taking accont of COULOMB's interaction between the electrons)
              is MAXWELL-like in strong electric fields.Temperature here depends upon
              electric field strength and is different from the temperature of the pho-
              nons.The function for energy- and temperature distribution are given.For
              the purpose of computating the recombination coefficient a function de-
              rived by PEKAR is used.In this formula the entire temperature of the elec-
              tron gas in the presence of an electric current.This is,however, allowed
Card 1/2      only if the steady state corresponding to the temperature $\Theta$ is established.

On a Possible Mechanism of an Increase of Conductivity of 56-4-28/52
the Atomic Semiconductors in a Strong Electric Field.

The free length of path has to be several times smaller than the distance between the admixture centers. The investigation discussed here is valid in the interval of the field strengths $0,2 < E < 10^6$ CGSE.
(No illustrations)

ASSOCIATION
PRESENTED BY
SUBMITTED     3o.3.1956
AVAILABLE     Library of Congress
Card 2/2

BASS, F. G.

56-5-37/55

**AUTHOR:** BASS, F.G., KAGANOV, M.I.
**TITLE:** On the Problem of the Saturation of the Kholl's (read: Hall's) "Constant" in Semiconductors in Strong Magnetic Fields. (K voprosu o nasyshchenii "postoyannoy". Kholla v poluprovodnikakh v sil'nykh magnitnykh polyakh - Russian)

**PERIODICAL:** Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol 32, Nr 5, pp 1233 - 1235 (U.S.S.R.)

**ABSTRACT:** The paper under review determines an expression for the Kholl's/ read: Hall's/ "constant" in strong magnetic fields. This expression is valid for semiconductors with narrow zones. Already in previously published papers, the expression $R = 1/ec(n_1 - n_2)$ was obtained for the Kholl's /read: Hall's/ constant, with $n_1$ and $n_2$ denoting the densities of the electrons and of the holes, respectively. This expression is correct if only the closed isoenergetic surfaces play a role J. A. Swanson, Phys. Rev., Vol. 99, p. 1799 (1955), derived an analogous expression for semiconductors. In the special cases of a donor semiconductor ($n_2=0$) and of an acceptor semiconductor ($n_1=0$), this expression goes over into the usual formulae. The above-listed formula loses its meaning for a semiconductor proper, because then $n_1=n_2$. In the paper under review, its authors derive an expression for the Kholl's /read: Hall's/ constant which is appropriate for the semiconductors proper. In this context, this expression is of particular importance for the semiconductors with narrow zones. For reasons of simplicity, the paper under review investigates a semiconductor with a certain spectrum as reproduced in the paper. At T=0, let two zones (a and b)

Card 1/2

56-5-37/55

On the Problem of the Saturation of the Kholl's (read: Hall's) "Constant" in Semiconductors in Strong Magnetic Fields.

completely filled and let the third zone (c) be empty. In zone b let there exist only an open surface, and in zone z let the open surfaces be situated in such a height that it is possible to neglect the excitation of these states by the electrons. Similar conditions prevail if zone b is substantially narrower than zone c. In the case investigated in the paper under review, we have the following expression for the Kholl's /read: Hall's/ constant R: $R = \rho_{yx}/H = 1/\sigma_{xy}H$. An explicit expression for R is given in its explicit form. In the case of a semiconductor proper, $R = e(\mu - \xi_0)kT/ecN$ is obtained. This expression has qualitative validity even then if the layer of the open surfaces is narrow as compared to the width of the zone. (1 reproduction).

ASSOCIATION: Physical-Technological Institute, Academy of Sciences of the Ukrainian SSR.

SUBMITTED:    13 April 56
AVAILABLE:    Library of Congress

Card 2/2

LASS, F. G., KAGANOV, M. I. (IREON, Khar'kov)

"Correlation Ratios for Random Electron Currents and Fields at Low Temperatures".

The author considered the influence of the free electron run length on the correlation ratio between the components of random currents and fields in the metal. He showed that the correlation radius coincides with the skin layer thickness for frequencies at which the skin layer thickness is much greater than the free run length. It coincides with the free run length at frequencies which satisfy the opposite condition. The results obtained by these investigators uncovered the physical meaning for the correlation function conditions of foreign fluctuation currents and fields, which were introduced into the thermal noise theory by S. M. Rytov.

report presented at the All-Union Conference on Statistical Radio Physics, Gor'kiy, 13-18 October 1958. (Izv. vyssh uchev zaved-Radiotekh., vol. 2, No. 1, pp 121-127)   COMPLETE card under SIFOROV, V. I.)

BRAUDE, S.Ya.; BASS, F.G.

Possibility for determining the distribution function of scatterers on a ruffled sea by radar. Izv.vys.ucheb.zav.; radiofiz. 1 no.3: 161-162  ' 58.                                                     (MIRA 12:1)

1. Institut radiofiziki i elektroniki AN USSR.
                    (Radio waves)

AUTHORS:   Bass, F.G. and Bocharov, V.G.                109-3-2-3/26
TITLE:     The Theory of Scattering of Electromagnetic Waves on a
           Statistically Nonuniform Surface... (K teorii rasseyaniya
           elektromagnitnykh voln na statisticheski nerovnoy pover-
           khnosti)

ABSTRACT:     The problem is dealt with by means of the perturbation
           theory as developed by Al'pert and others (Ref.4).   It is
           assumed, on the basis of the theory, that a deviation of the
           surface from a certain plane can be regarded as a small corr-
           ection.   A statistically non-uniform surface  $z = \zeta(x,y)$  is
           assumed to be situated below a radiating dipole.  If the
           surface is ideally conducting, the boundary conditions for
           the electrical field can be written as

$$E_x + E_z \frac{\partial \zeta}{\partial x} = 0; \quad E_y + E_z \frac{\partial \zeta}{\partial y} = 0 \qquad (1)$$

           and the field vector $\vec{E}$ can be expressed as a series in terms
           of $\zeta$ or by:

Card1/3           $$\vec{E} = \vec{E}^{(0)} + \vec{E}^{(1)} + \vec{E}^{(2)} + \dots \qquad (3)$$

The Theory of Scattering of Electromagnetic Waves on a
Statistically Nonuniform Surface.

where $\vec{E}^{(0)}$ is the field of the dipole over the ideally
conducting plane. From the above, it follows that the field
in the plane $z = 0$ can be expressed by Eqs.(4) and (5). On
the other hand, the field at any point in the space can be
evaluated from Eqs.(6) where $k$ is the wave vector, $\lambda$ is
the wavelength and $\varrho$ is the distance between the point of
observation and the point of integration; the integration in
Eqs.(6) is performed over the surface $z = 0$. The statistical
properties of the scattered electro-magnetic field are charac-
terised by the mean field $\overline{E}_i$ and the dispersion tensor
$\mathfrak{S}_{ik} = \overline{(E_i - \overline{E}_i) \times (E_k - \overline{E}_k)}$. If the radiating dipole is
vertical and has an intensity $p$, the fields can be expressed,
in the first approximation, by Eq.(8), where $\vartheta$ and $\varphi$ are
the angles of a spherical co-ordinate system (Ref.4). For a
horizontal dipole, the field is given by Eqs.(9). From the
above, it is found that the components of the dispersion
tensor for the vertical dipole are given by Eq.(11) and those
for the horizontal dipole are expressed by Eqs.(12). In the
above equations, $S$ is the area of the scattering surface,
Card2/3

The Theory of Scattering of Electromagnetic Waves on a Statiscally Nonuniform Surface.

109-3-2-3/26

Q is the amplitude of the correlation function as given by Eq.(10) and $\alpha$ and $\beta$ are two vectors having components $(\sin\vartheta, 0, 0)$ and $\frac{\partial\rho}{\partial x}, \frac{\partial\rho}{\partial y}, \frac{\partial\rho}{\partial z}$ , respectively.

In the second approximation, the field is given by Eq.(16), in which the function $A(\vartheta)$ can be determined from the correlation function and the directivity of the dipole. From the above, it is found that the Pointing vector for the scattered radiation can be written as shown in Eq.(19), where c is the velocity of light. Under certain conditions (see Eq.(20), the Pointing vector can be expressed by Eq.(21), where F and Q are defined by Eqs.(22). The paper contains one appendix and 6 references, 3 of which are Russian and 3 English.

SUBMITTED:   January 13, 1957

AVAILABLE:   Library of Congress

Card 3/3

1. Electromagnetic waves-Scattering   2. Mathematical analysis

AUTHORS: Bocharov, V. G. and Bass, F. G.

SOV-109-3-4-25/28

. TITLE:   Scattering of Electromagnetic Waves on a Statistically Non-Uniform Surface (O rasseyanii elektromagnitnykh voln statisticheski neodnorodnoy poverkhnost'yu)

PERIODICAL: Radiotekhnika i Elektronika, 1958, Vol 3, Nr 4, pp 577-578 (USSR)

ABSTRACT:  The aim of this note is to find an expression for the average electromagnetic field and the average energy scattered from a portion of a statistically non-uniform surface, having a complex permittivity $\varepsilon(x, y)$ . If the incident wave impinging on the surface $(z = 0)$ is radiated from a vertical dipole, the boundary conditions for the electric field at the surface can be written as Eqs.(1), where $\eta = 1/\sqrt{\varepsilon}$ , k is the wave vector, $\vec{E}$ is the electric field and $\phi$ is the glancing angle. The field at an arbitrary point can be expressed by Eqs.(2), in which S is the area of the scattering portion of the surface, $\rho$ is the distance between the point of scattering and the point of observation. It is shown that the average scattered field can be expressed by Eqs.(4), in which $R_0$ is the distance between the dipole and the centre of the scattering area and the observation point and

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SOV-109-3-4-25/28

Scattering of Electromagnetic Waves on a Statistically Nonuniform Surface

$\vec{\alpha}$ and $\vec{\beta}$ are vectors having components $\cos \phi$, $0$, $0$ and $\frac{\partial \rho}{\partial x}$, $\frac{\partial \rho}{\partial y}$, $\frac{\partial \rho}{\partial z}$ respectively. On the other hand, the average value of the Poynting vector can be expressed by Eqs.(5), where $c$ is the velocity of light. The letter contains 2 Soviet references.

SUBMITTED: April 11, 1957

1. Electromagnetic waves--Scattering   2. Mathematics--Applications

Card 2/2

SOV/109-3-7-20/23

AUTHOR:  Bass, F. G.

TITLE:  Determination of the Correlation Function for the Fluctuation
of Permittivity, Based on Phase Measurements (Ob opredelenii
funktsii korrelyatsii mezhdu fluktuatsiyami dielektricheskoy
pronitsayemosti  po fazovym izmereniyam)

PERIODICAL: Radiotekhnika i elektronika, 1958, Vol 3, Nr 7,
pp 970-971 (USSR)

ABSTRACT:  It was shown in the work of Krasil'nikov (Ref.2) that
the phase correlation function  K  is related to the
permittivity fluctuation correlation function  R  by Eq.(1),
where  $\lambda$  is the wave length.  From this expression  R  can
be determined in terms of the derivatives of  K  .  However,
in practice the determination of  K  may present some diffi-
culties.  It is simpler to determine the dependence of the
phase correlation function on the distances between a set
of parallel routes having a constant length  L  .  K  can
then be determined from Eq.(3), where  $\zeta$  is the spread
between various routes.  Expression (3) can be written as
Eq.(4), from which it follows that  R  can be expressed as
Eq.(5) or Eq.(6).
(Note: After the submission of this paper to the Editor,
it was found that an article dealing with a similar problem

Card 1/2

SOV/109-3-7-20/23

Determination of the Correlation Function for the Fluctuation of Permittivity, Based on Phase Measurements

appeared in the "Journal of Applied Physics, 1957, Nr 6, p 684). The paper contains 3 references, 2 of which are Soviet and 1 English.

ASSOCIATION: Institut radiofiziki i elektroniki AN USSR (Institute of Radiophysics and Electronics of the Academy of Sciences, Ukrainian SSR).

SUBMITTED: July 19, 1957.

1. Correlation functions--Determination   2. Phase measurement
--Applications

Card 2/2

AUTHOR:  Bass, F. G.

SOV/126-6-6-1/25

TITLE:  Theory of Galvanomagnetic Effects in Semiconductors and
Metals Which Are Placed in a Strong Electric Field (Teoriya
gal'vanomagnitnykh effektov v poluprovodnikakh i metallakh,
nakhodyashchikhsya v sil'nom elektricheskom pole)

PERIODICAL:  Fizika metallov i metallovedeniye, Vol 6, Nr 6, 1958,
pp 961-975 (USSR)

ABSTRACT:  Ohm's law is assumed to hold in the usual theory of gal-
vanomagnetic effects in metals and semiconductors. Davydov
(Ref.2) showed that in sufficiently strong fields Ohm's law
does not hold because of the slowing down of transfer of
energy between current carriers and the crystal lattice of
a  semiconductor. This slowing down of energy transfer may
raise the energy of electrons well above their thermal ener-
gy and consequently this energy will depend on the applied
electric field.  Ginzburg and Shabanskiy (Refs.3, 4) pointed
out that under certain conditions a similar effect can be
observed in metals.  Both in semiconductors and in metals
the mean electron energy in a lattice will depend on the
mean free path when a strong electric field is applied.  A
magnetic field, which alters the effective mean free path,
Card 1/3  may strongly affect the current carrier energies.  This

SOV/126-6-6-1/25

Theory of Galvanomagnetic Effects in Semiconductors and Metals
Which Are Placed in a Strong Electric Field

means that the kinetic coefficients and the mean energies
will depend on electric and magnetic fields. The author
calculates the dependences of several kinetic coefficients
on electric and magnetic fields for the case of non-linear
dependence of the electric current on the electric field.
The treatment is general: interaction of conduction electrons
with the lattice is not specified and no assumptions are made
about the existence of a mean transit time between two
collisions. Furthermore, the author does not assume a Max-
wellian distribution of current carriers since, in fact,
electrons obey Fermi statistics in metals and in some semi-
conductors. Three kinetic coefficients are calculated:
electrical resistance $\rho$ , non-dimensional Hall field  W
and Hall constant  R  . The paper is entirely theoretical.
Some of the results reported in the paper have already been
published earlier (Ref.1). Acknowledgements are made to

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Theory of Galvanomagnetic Effects in Semiconductors and Metals      SOV/126-6-6-1/25
Which Are Placed in a Strong Electric Field

    M. I. Kaganov for his advice. There are 7 references, 6
    of which are Soviet and 1 English.

ASSOCIATION: Institut radiofiziki i elektroniki AN USSR (Institute
    of Radio-Physics and Electronics, Academy of Sciences,
    Ukrainian SSR)

SUBMITTED: January 8, 1957.

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AU HORS:     Bass, F. G., Kaganov, M. I.

TITLE:                                                    SOV/56-34-5-15/61
            Correlation Relations for Random Electric Currents and Fields at
            Low Temperatures (Korrelyatsionnyye soc aosheniya dlya sluchaynykh
            elektricheskikh tokov i poley pri nizkikh temperaturakh)

PERIODICAL:  Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958,
            Vol. 34, Nr 5, pp. 1154 - 1157 (USSR)

ABSTRACT:    The correlation between the random foreign currents in a metal
            is, according to Leontovich and Rytov (Ref 1), determined by the
            tensor of conductivity:

$$j_i(\vec{r})j_k(\vec{r'})_\omega = \frac{\hbar\omega}{2\pi}\sigma_{ik}\,\mathrm{cth}\,\frac{\hbar\omega}{2T}\,\delta(\vec{r}-\vec{r'}).$$ In the case of

$\hbar\omega \ll T$  $j_i(\vec{r})j_k(\vec{r'})_\omega = \frac{T}{\pi}\sigma_{ik}\delta(\vec{r}-\vec{r'})$ holds. By means
            of these two formulae the correlation relations between the
            components of the random fields can be determined. At low
            temperatures, however, Ohm's law $j_i = \sigma_{ik}E_k$ must be replaced

Card 1/3    by an integral relation between the current density $\vec{j}$ and the

electric field strength $\vec{E}$. This relation is determined by
solving the kinetic equation. In the general case for the
integral relation between current density and field strength
$j_i(\vec{r}) = \int K_{ik}(\vec{r},\vec{r'})E_k(\vec{r'})dV'$   holds. The spatial correlation
function between the components of the electric current density
is expressed by the components of the kernel $K_{ik}(\vec{r},\vec{r'})$. For
the determination of the correlation relations only the concrete
form of the interrelation between the current density $\vec{j}$ and
the electric field strength $\vec{E}$ must be written down. For this
purpose a given linearized kinetic equation is employed. Sub-
sequently the dependence of the correlation function on
$\vec{\rho} = \vec{r} - \vec{r'}$ is computed. The random currents are, as expected,
correlated among each other in distances of the order of the
free path. From the Maxwell (Makswell) equations the authors
then derive a term for the electric field strength. In the
following the limiting case with a long free path is inves-
tigated. The general formulae are very complicated and there-
fore the authors restrict themselves to asymptotic expressions

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Correlation Relations for Random Electric Currents          SOV/56-34-5-15/61
and Fields at Low Temperatures

for the two cases $\varrho \ll \delta \ll \ell$ and $\delta \ll \ell \ll \varrho$. The authors express
their gratitude to L.D.Lanuau and Ye.M.Lifshits for having made
available the book "Elektrodinamika sploshnykh sred(= Electro-
dynamics of Continuous Media) previous to its publication.
There are 5 references, 4 of which are Soviet.

ASSOCIATION:    Institut radiofiziki i elektroniki Akademii nauk Ukrainskoy SSR
                (Institute of Radiophysics and Electronics, AS Ukr SSR)
SUBMITTED:      November 26, 1957

1. Metals—Electrical properties   2. Metals—Temperature factors
3. Electric fields—Analysis   4. Electric current—Analysis
4. Mathematics—Applications

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Translation from: Referativnyy Zhurnal Fizika, 1959, Nr 7, p 157 (USSR)

AUTHORS:     Bass, F.G., Kaganov, M.I.

TITLE:       On the Theory of Galvanomagnetic Phenomena in Semiconductors

PERIODICAL:  Uch. zap. Khar'kovsk, un-ta, 1958, Vol 98, Tr. fiz. otd. fiz.-matem. fak., Vol 7, pp 57 - 60

ABSTRACT:    The authors derive an expression for the tensor of the mobilities of free electrons (holes) in a semiconductor in a magnetic field H. The calculation is carried out with the aid of the classical kinetic equation, which is valid for $\mu H \ll kT$ (where $\mu$ is the Bohr magneton, k is the Boltzmann constant, and T is the absolute temperature). In this equation the collision operator is expressed through the tensor of the relaxation times, which makes allowance for the anisotropy of charge carrier scattering. In the case of scattering of carriers with an anisotropic effective mass on acoustic lattice vibrations, Herring and Vogt's expression for the tensor of mobilities in the absence of a

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On the Theory of Galvanomagnetic Phenomena in Semiconductors     SOV/58-59-7-15756

magnetic field (RZhFiz, 1957, Nr 1, 1581) is adopted to calculate to its completion the tensor of mobilities in the presence of such a field. The authors hold that a study of the H dependence of the tensor of electrical conductivity may help to explain the anisotropy of charge carrier mobilities.

F. Itskovich

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